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UNITED STATES DEPARTMENT OF AGRICULTURE
MISCELLANEOUS CIRCULAR No. 107

EMERGENCY METHODS FOR RECONSTITUTION OF FLOODED SUGAR-CANE DISTRICTS IN LOUISIANA

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UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON
1927

THIS CIRCULAR has been prepared in anticipation of severe curtailment of the seed-cane supply in Louisiana by the flood now in progress in that State. Information from all available sources up to the present time indicates that great losses will be incurred, and it is still uncertain whether seed cane of the disease-resistant varieties 213, 36, and 234 P. O. J. in quantities sufficient to meet planting requirements will be saved. It is particularly desirable to increase the variety 213 P. O. J. by the method described in the following pages, and all planters who have any plants of this variety in their possession are strongly urged to increase it in any event. Developments of the next week or ten days will determine whether the other varieties should be similarly increased. The work should not be attempted if it can not be completed by the end of June.

Washington, D. C., June 10, 1927

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INTRODUCTION

The Louisiana sugar industry, already in a precarious condition from diminishing yields caused by mosaic and root disease, faces the severest test in its history. Two-thirds or more of the sugar-cane lands are inundated, due to the crevasse on the levees of Bayou des Glaises and the crevasses on the east bank of the Atchafalaya River, following the unprecedented floods during April and May. Prior to this new disaster the hope for a return to normal production rested in the small stock of disease-resistant varieties (213, 36, 234 P. O. J. and others) imported from Java in 1920–21 and released for propagation by the Department of Agriculture in 1922–23. This had been increased largely by private enterprise until approximately 20,000 tons of seed cane was planted in the fall of 1926. Owing to the encouraging performance of these varieties and the extraordinary interest taken in them by planters, it appeared likely that the State would be substantially on a normal production basis with the new varieties by the fall of 1927. Seed cane would have been available at scores of distributing points throughout the State, where it had been propagated on plantations in blocks of from 100 to 500 or more acres and in still larger amount at Southdown and adjacent plantations near Houma, where the varieties first attracted attention as commercial possibilities. In addition, hundreds of small planters were in possession of small acreages of these varieties and based their hope for a living wage in 1928 on their ability to plant their fields entirely to the new varieties this fall (1927). A considerable proportion of this seed cane has now been wiped out. Therefore, for some planters who have already been extended credit by the banks beyond the usual limit of business prudence, this means utter ruination. Some of them, however, will have saved part of their present acreage.

The question confronting the canegrowers is how to retrieve their former prospects by procuring in some way the necessary planting material of the disease-resisting varieties. There are many reasons that make impracticable the importation of this bulky planting material from foreign sugar-producing countries. Basing our hopes on the continued protection of the slender stock of cane that may escape the flood, particularly that at Southdown, which still constitutes the nucleus of the disease-resistant cane, it is possible by heroic measures to build up for the fall planting, despite the flood, a supply of seed cane adequate for the areas that were in prospect. It will require a revolutionary change in methods of propagating seed cane, unknown to many planters, and with the added disadvantage under present conditions of being laborious and expensive. The method of water-sprout or sucker transplanting will be outlined and illustrated in this circular as the only practicable method of providing a supply of seed cane, the imperative need for is recognized by all interested in the sugar industry in Louisiana.

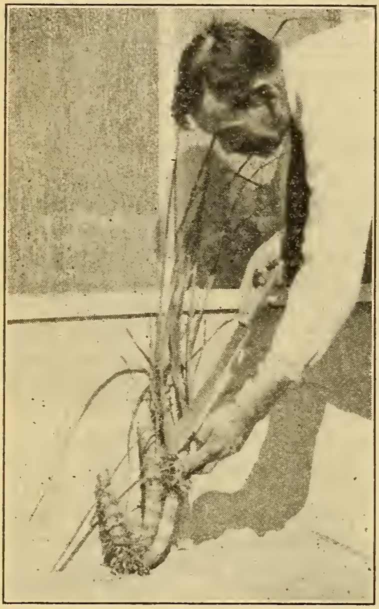

FIG. 1.—Method of severing sprouts from underground stem

DESCRIPTION OF SUCKER TRANSPLANTING

The P. O. J. varieties have, in addition to other estimable qualities, the ability to stool prolifically, which adapts them especially to rapid increase by transplanting suckers. This consists of cutting young sprouts or suckers from the parent stool with a sharp knife at the point of attachment to the mother shoot, and immediately transplanting them to a new location after severe topping to prevent drying out before sufficient root system is established. The possibility of using this method is due to production by the sugarcane plant of secondary underground shoots from the original shoot arising from an eye on the seed piece. Later underground shoots develop from eyes on the secondary shoots, and further development in the same way finally results in the large number of stalks seen in these prolific stooling varieties. If root development has taken place on them, the secondary or tertiary shoots, or shoots of an even higher order, may be detached and can maintain an independent existence. As soon as the young shoots or suckers are established they continue to grow rapidly and in the same way form a new stool.

The great advantage of this method over the ordinary propagation by the use of fairly mature stalks with dormant eyes lies in the fact that multiplication can begin with cane only three or four months old, and, moreover, growth is practically uninterrupted; that is, the vigorous and well-developed young sucker when set out is a rapidly growing plant. With seed cane, on the other hand, there is necessarily a dormant period followed by germination of the eyes and production of the shoots therefrom, a comparatively slow process.

Sucker transplanting is a simple process and consists of five operations.

(1) Large, vigorous suckers, 3 or 4 feet tall, are selected and carefully dissected from the parent stool at the point of attachment below ground after the dirt has been loosened and scraped away with the hand. (Fig. 1.) A long stout butcher knife is a convenient tool to use for this purpose. The sucker should be carefully pulled out with the least possible injury to the young tender roots that have already started to develop on it, as the roots are essential for rapid establishment of the plant in its new situation. (Fig. 2.)

(2) The suckers are now topped just above the growing point by a sharp blow with the knife. (Fig. 3.) The removal of the leaves in this way is necessary to compensate for the inevitable loss of a portion of the roots. They may be piled temporarily and covered with wet burlap, or placed directly in the cart or wagon and transported to the new location, but must be kept continually wet and protected from the sun until set out. Where this method has been successfully used on a large scale in Louisiana the suckers are collected in buckets as they are taken from the ground and are dumped into a tank mounted on a wagon to be hauled where needed. (Fig. 4.) About 6 inches of water is provided in the buckets and tank. In hot, dry weather this procedure is recommended.

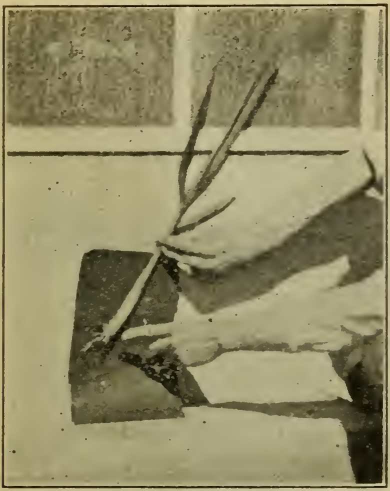

FIG. 2.—As many roots as possible should be retained

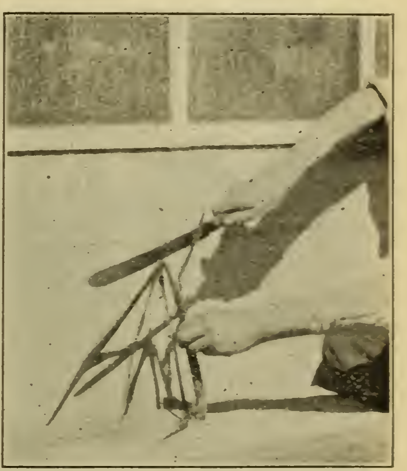

FIG. 3.—Topping the sprout to remove the leaves

(3) The topped suckers are now planted *in wet ground if available*, in rows of the regulation width about 2 feet apart in the row. (Fig. 5.) The small holes for individual suckers can be easily made with a hoe.

(4) The plants start growing quicker when set directly in mud or even in a furrow containing water, if drainage is provided in the following 24 to 36 hours. Otherwise the plants may be set in holes,

a little loose dirt added, and a small quantity of water poured in to silt the soil and bring moisture into intimate contact with the meager root system. More dirt is then added and firmed with the foot, but a slight depression is left about the plant to facilitate subsequent watering.

(5) In case the ground selected for transplanting is not already wet, the young plants must be irrigated immediately, as the small quantity of water added in planting is quickly dissipated in the surrounding soil. (Fig. 6.) Where no provision exists for furrow irrigation, recourse must be had to bucketing the water as illustrated. This is an absolutely indispensable step to insure survival of the young plants. Unless rains are frequent they must be kept wet for two or three weeks by irrigation or other artificial means to promote rapid root growth. When the root system is established the plants will be as well able to withstand drought as cane planted in the ordinary way.

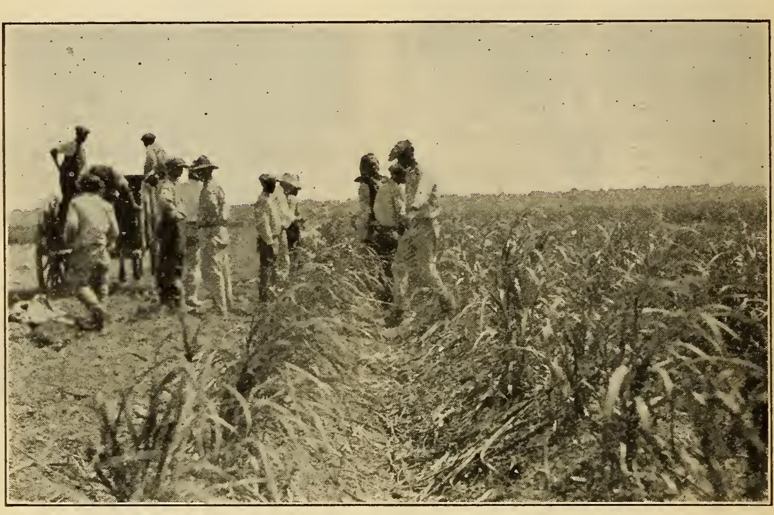

FIG. 4.—Filling tank wagon with suckers for transporting to new field

By utilizing suckers in this way the acreage can be increased easily ten-fold, and using the varieties we are concerned with, it is within the range of possibility to increase it fifteen or twenty fold. Fields of cane from transplanted suckers will, of course, not mature sufficiently by fall to be used for mill cane, but it will make ideal seed.

IMPORTANCE OF IMMEDIATE PROPAGATION OF SEED CANE

In the present emergency existing conditions must be taken into account and the method described must be adapted to those conditions. When the flood subsides it is expected that there will be large areas of the choicest land on which the young cane has been completely killed. Probably there will be no time to prepare this land properly for replanting, as the water will remain later in the sugarcane districts than in any other crop areas inundated by the flood. The wet condition of the land is no bar to transplanting. It is, in fact, an advantage, and work should go forward as the water recedes. The suckers may be brought from the higher ground or other fields or plantations not inundated and the middles replanted, which, from repeated cultivations and weedings before the flood, will be in ideal condition for planting directly in the mud. Later, as the new plantings grow, dirt can be brought to the cane, the old cane row finally broken out, and middle drainage established in the same way that a crop of corn is usually started between the rows of early potatoes.

It is recognized that some method will need to be developed for making the surviving stocks of seed cane available to the cane growers of the region who will be dependent upon obtaining seed cane for the planting of their fields in the autumn of 1927, but this is a matter which will require some time to work out. The important thing requiring immediate attention is the insuring of an adequate supply of cane.

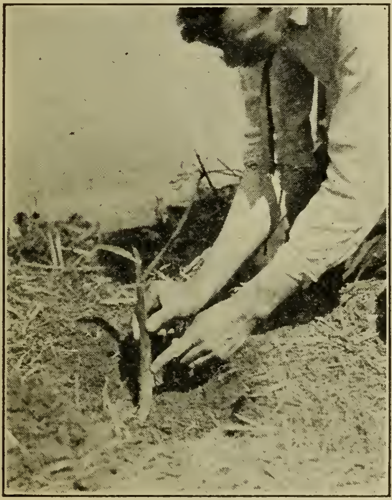

FIG. 5.—Planting sprouts in holes and covering to former depth. A depression in the soil should be left for water when transplanting in dry soil

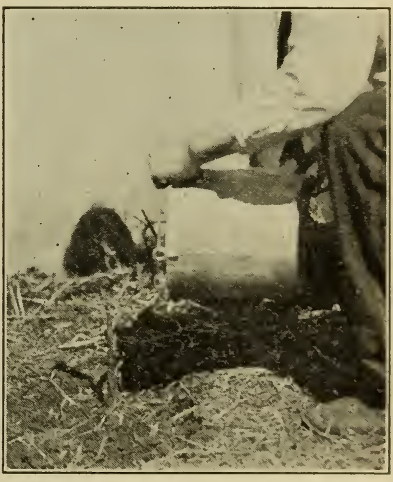

FIG. 6.—Irrigating the sprouts after setting out. This is an indispensable step

There is great apprehension that in the event no adequate supply of seed cane of the disease-tolerating varieties is available, farmers will be forced to utilize every stick of the old diseased varieties that can be salvaged from the blighted fields for planting purposes. It has been pointed out that long-continued adherence to the D–74 and Purple varieties had already brought the industry to the brink of complete ruination. On account of the dwindling prosperity of the cane regions, due to the disease-induced low production, attention has heretofore been directed toward the possibility of diverting these lands to other uses. An increase in the acreage devoted to early truck crops had taken place, but experience has not warranted the hope that any greatly increased production such as would follow the utilization of this large area for early vegetables could be absorbed without seriously disrupting the market. There is no staple crop in sight that seems adapted to the region to take the place of the $100,000,000 sugar-cane industry, and until such a crop appears it is necessary to concentrate efforts on returning the region to its former state of prosperity by attention to means for increasing yields of cane.

The attainment of this end is well on its way toward consummation, with the prospect of a 1928 crop of P. O. J. canes yielding 20 to 25 tons per acre, and this must remain the goal if grave consequences are to be averted. The need for prompt and concerted action on the part of producers, bankers, State and Federal authorities, and the American public can not be too emphatically stressed.

This circular is a contribution from—

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